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Relative Deprivation, Attitude Contrast Projection, and Opinion Certainty

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This research examines social projection between relatively deprived groups and its effect on opinion certainty. In Study 1, disadvantaged and advantaged group members indicated their own attitudes on six issues, and then estimated the positions either of their in-group, their respective rival out-group, a control out-group, or they received no opportunity to project. As expected, disadvantaged participants projected attitudinal contrast onto their advantaged rival out-group. Negative thoughts about the rival mediated subsequent increments in opinion certainty. Alternatively, advantaged participants assumed moderate consensus with their disadvantaged rival. They also exhibited ambivalent out-group thoughts and low opinion certainty. Study 2 replicated the effect of disadvantaged status on contrast projection and opinion certainty. Discussion focuses on the different perspectives of relatively deprived groups.

KEYWORDS ambivalence, attitudes, attitude strength, intergroup relations, relative deprivation, social projection

GROUPS MUST often contend with each other in an environment of inequality. Some inequalities are of little consequence, like a dietary preference for rice instead of potatoes. In other cases, grievous inequalities exert pervasive and asymmetrical effects associated with relative deprivation (RD; Runciman, 1966; see also Crosby, 1976). The experience of being relatively deprived is most severe for low power groups, particularly when an advantaged out-group is a relevant comparison target and intergroup inequities are salient (Major, 1994). Unequal power over scarce resources is a common feature of RD. However, intergroup inequality can also stem from an irony of fate or judgment for which no one can be held directly responsible. Natural disasters like flood or earthquake, or economic problems that produce unemployment cause spiraling disadvantage and invidious comparisons to out-groups not beset by these catastrophes (Staub, 2001). Thus, a group's disadvantaged or advantaged status may result from incalculable

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fortune, realistic conflict, or their combined influences.

Disadvantaged group members who are frustrated by obstacles that hinder improvement of their situation may resent the prosperity enjoyed by a relevant advantaged out-group (Major, Testa, & Bylsma, 1991). Such resentment produces negatively distorted estimations or *projections* about many of the attitudes, beliefs, and intentions of the advantaged out-group (Kramer & Jost, 2002; Thompson & Hastie, 1990).[1] Furthermore, this negative affect can increase the commitment of disadvantaged group members to their own goals and beliefs (Mark & Folger, 1984). Conversely, the advantaged group must also anticipate attitudinal differences from its disadvantaged rival. However, compared to the disadvantaged group, a securely advantaged group has less reason to experience intense negative affect. Reduced negative affect can mitigate intergroup estimations of attitude disagreement (Stephen & Stephan, 1985), and lead advantaged group members to reevaluate their commitment to an inequitable status quo (Tougas & Veilleux, 1990).

Very few studies have investigated the effect of group RD on attitude projection. Moreover, we could find no research that examined differences in opinion certainty that followed the projection of attitudes between disadvantaged and advantaged groups. It is important to understand what disadvantaged and advantaged group members estimate about each other's attitude positions, particularly when these estimations alter the certainty people experience about their own opinions. RD can generate intense negative emotions and reduce intergroup communication (Deutsch, 1973). This often makes accurate intelligence about out-group members difficult to obtain. Hence, groups are likely to rely on projective processes to anticipate the action tendencies of out-group members and to plan actions of their own.

The present research looks at how attitudinal projection between groups characterized by inequality influences opinion certainty. In the next three sections, we first describe how simply belonging to a group affects attitude projection and opinion certainty. Second, the impact of membership in a disadvantaged group is described in terms of the influence it exerts on intergroup projection and opinion certainty. Third, the effects on intergroup projection and opinion certainty of membership in a securely advantaged group are described.

Group membership, attitude projection, and opinion certainty

People generally endorse attitude positions that imply rewards for their group; and they logically predict that in-members agree with those opinions (Krueger, 1998). Notwithstanding, the expectation of intragroup consensus is a ubiquitous phenomenon that is also found on issues that do not promise benefits to in-group members (Spears & Manstead, 1990). Expressions of attitude agreement between in-group members provide subjective validation for an individual's opinions (Abelson, 1995). Similarly, the projection of intragroup attitude agreement can augment the opinion certainty of in-group members (Holtz, 2003, 2004).

Krueger (1998) observed that the estimation of out-group attitude positions elicits less perceived self-other consensus than the estimation of in-group positions. The evidence he reviewed came primarily from equal status groups that had no history of serious conflict. In three studies of minimal groups, Clement and Krueger (2002) confirmed that the estimation of reduced similarity to the out-group, rather than assumed contrast, accounted for the difference between in-group and out-group projection effects. Reduced similarity between self and out-group members is indicated statistically by lower *positive* correlations between one's own attitude positions and those attributed to the out-group, compared to the self–other relationship found for in-group targets. Contrast effects, on the other hand, are indicated by *negative* self–other correlations in the out-group projection condition compared to positive correlations in the in-group projection condition. Clement and Krueger (2002) found near-zero correlations between the attitudes of their participants and estimations of out-group positions when the groups were equal in status. They concluded that this relationship indicates

the perception of out-group irrelevance rather than intergroup conflict. Intergroup attitude projection that makes a non-relationship with out-group members salient can also buttress opinion certainty (Holtz, 2004). However, it does so by an in-group favoritism process. That is, the estimation of attitude positions associated with an irrelevant out-group increases appreciation for the bonds that link individuals to other members of their own group.

This pattern of intergroup projection and its influence on opinion certainty are likely to change when group members experience disadvantage in comparison to a relevant advantaged out-group. In the latter instance, the projection of attitudinal contrast between groups is expected and intergroup bias should determine opinion certainty.

Relative disadvantage, attitude projection, and opinion certainty

Disadvantaged group members become resentful when they can imagine themselves obtaining the benefits that advantaged group members possess, particularly after their attempts to correct intergroup inequities fail (Folger, 1992; Mikula, Scherer, & Athenstaedt, 1998). In this situation, advantaged out-group members are conspicuous targets for negative thoughts and attributions. The direct involvement of advantaged group members in maintaining the status quo can be difficult to detect, especially if group status is institutionalized or ingrained in the culture that groups live in (Jackman, 1994). Nevertheless, disadvantaged group members often suspect that their advantaged out-group supports the social system of intergroup inequality (Duckitt & Mphuthing, 2002; Fiske & Ruscher, 1993; Islam & Hewstone, 1993; Miller, 2001; Wright & Tropp, 2002).

Whether the contribution of the advantaged out-group to the plight of the disadvantaged group is active or passive, negative affect from disadvantaged group members strengthens the likelihood that attitudinal contrast will be assumed between groups (Bizman, Yinon, & Vizgardiski, 1993; Grant & Brown, 1995; Rouhana, O'Dwyer, & Vaso, 1997; Stephan & Stephan, 1985). Furthermore, factors that activate group stereotypes and encourage their application can broaden the range of issues on which disagreement is predicted. Initial conflict about inequitable outcomes might be confined to a narrow range of central concerns, especially if groups have no history of prior disagreement or stereotypic representations of out-group members are not well-formed. However, as RD protracts over a span of years, and instances of disagreement begin to define the intergroup relationship, stereotypes and generalized negative expectations about out-group members are easier to envisage and use (Kunda, Davies, Adams, & Spencer, 2002).

One cardinal stereotype that is readily applied to the members of entitative out-groups is that they cannot be trusted to forego self-interest (Campbell, 1967; Kramer & Messick, 1998; Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). Self-interest can be measured as an acquisition of material resources, or as a gain of social esteem or status (Tajfel & Turner, 1986). In either case, disadvantaged group members are likely to assume their advantaged out-group will adopt contrary positions on all issues that matter to them (Bodenhausen, 1993; Thompson & Hastie, 1990). Any acquisition of material or symbolic resources can threaten an existing status quo. Therefore, disadvantaged group members may construe many of their aspirations and attitudes as events that out-group members disapprove of, particularly when status relations with the advantaged out-group are primed (Alexander, Brewer, & Herrmann, 1999; Hinkle & Brown, 1990). The perception of out-group opposition strengthens commitment to the values, beliefs, and opinions that differentiate disadvantaged from advantaged group members (Crocker & Blanton, 1999; Dion, 1975; Duckitt & Mphuthing, 2002; Grant, 1993; Holtz & Miller, 2001; Smith & Ortiz, 2002). Accordingly, we expect the distorted projection of intergroup contrast to confer opinion certainty onto disadvantaged group members across issues directly and indirectly related to their inequality.

In sum, group members can augment their opinion certainty by estimating attitude consensus and support within their own group. However,

relatively disadvantaged group members can also feel certain by estimating attitudinal contrast from a relevant advantaged out-group. In the context of long-standing rivalries, contrast projection ought to be associated with negative thoughts about the advantaged out-group even on issues that are indirectly related to intergroup inequality. In the next section, the relationship between attitude projection and opinion certainty is discussed in terms of membership in an advantaged group. Although disadvantaged groups are justifiably sensitive to opposition from their advantaged rival, securely advantaged group members have less reason to be so concerned.

Relative advantage, attitude projection, and opinion certainty

The classic quandary of advantaged groups is how to respond to legitimate out-group interests without abrogating in-group privilege. One strategy is to simply remain ignorant of the extent of out-group dissent (Leach, Snider, & Iyer, 2002). Of course, the tranquility of this naiveté is disrupted when issues arise that pit the needs of one group against the satisfaction of the other. Under this kind of pressure, Tyler and Smith (1998) suggested that downgrading the competency of the disadvantaged group and promulgating the out-group's undeservingness can justify inequality. This approach requires that advantaged group members disavow any legitimacy associated with out-group complaints. However, the downside of such an action is that it can provoke extreme reactions by disadvantaged group members. A third, middle ground is to acknowledge intergroup inequities, but also to downplay their significance (Branthwaite, Doyle, & Lightbown, 1979; Spears & Manstead, 1989; van Knippenberg & van Oers, 1984). This is a pragmatic strategy when intergroup inequities are undeniable, but the advantaged group is absolutely secure in its privileged role (Sachdev & Bourhis, 1985). Privilege is secure when power over a resource (e.g. fertile land) is absolute, and disadvantaged group members are unable to gain access to it. Advantaged group members can also feel secure if gains made by their disadvantaged out-group do not threaten their own proprietary rights. In the latter situation, although their material resources are secure, advantaged group members still risk the loss of exalted status and 'bragging rights' in the event that intergroup inequity is reduced. Nevertheless, this potential change in the status quo between groups should not evoke the same negative affect among advantaged group members that the disadvantaged group experiences. However, because advantaged group members gain nothing by benefits that accrue to their out-group (and risk a loss of their unique status), they are likely to feel ambivalent about social change. This will be especially true when the intergroup relationship is characterized by a history of antipathy. Their ambivalence can lead securely advantaged group members to downplay the significance or importance of intergroup inequity (Montada & Schneider, 1989).

In any case, we expect advantaged group members to project less attitude contrast between themselves and their relevant disadvantaged out-group than the disadvantaged group projects onto them. In fact, advantaged group members are likely to project reduced similarity onto the disadvantaged out-group, instead of attitudinal contrast, especially when members enjoy secure privilege. The ambivalence of advantaged group members will be indicated in the rival out-group target condition by thoughts about the disadvantaged out-group that are decidedly mixed in valence (i.e. positive and negative; Katz, 1981). Ambivalence should decrease opinion certainty among advantaged group members as a consequence of estimating the attitude positions of the disadvantaged out-group. Reduced certainty about the correctness of one's own opinions implicitly acknowledges the credibility of out-group attitude positions or the potential illegitimacy of intergroup disparities. However, one way that advantaged group members can offset their ambivalence (and leave the door open to retaining in-group privilege) is to view the problems of the disadvantaged out-group as ultimately unimportant or low priority.

In sum, attitude projection between groups should influence opinion certainty and ratings of issue importance depending upon the

disadvantaged or advantaged status of participants. Disadvantaged group members are expected to project contrast between their own attitude positions and those they attribute to their advantaged out-group. Disadvantaged participants should also exhibit more negative thoughts about their advantaged out-group and greater opinion certainty than advantaged participants or persons in a no-projection control condition. On the other hand, advantaged group members who project attitude positions onto their disadvantaged out-group may acknowledge opinion uncertainty, but discount the importance of issues that separate the groups. Minimizing the importance of the issues allows advantaged group members to indirectly cache support for maintaining the status quo (Jackman, 1994).

These ideas are tested in two studies. The first study examines attitudinal projection between two high schools with a history of relative deprivation. Students enrolled in either a disadvantaged or an advantaged high school estimated the attitude positions of their respective rival out-group school, a control out-group school, or students at their in-group school. In a fourth (control) condition participants received no opinion projection task. The second study further examines attitude contrast projection in a laboratory context in which relative deprivation between groups is experimentally manipulated.

The Research Setting of Study 1

Two high schools located in Van Wert County in northwest Ohio provided the context for this investigation of RD effects on attitude projection, opinion certainty, and issue importance. Van Wert High School (VWHS) is located in an urban district that has been economically poorer than the Crestview High School (CHS) district for a number of years. Statistics from the US Census 2000 reported the unemployment rate for the area around VWHS at twice the level found for the rural, but relatively prosperous, CHS area (7.4% vs. 3.3%). Furthermore, the median income of the VWHS area is also lower than that for the CHS area ($33,205 vs. $38,500; US Census, 2000). The economic disparity between these adjacent school districts became the focus of intergroup comparison after Crestview High School burned down in 1988 (Crestview considers new school, 1990). VWHS was much older (circa 1913) and in great need of repair and upgrades (e.g. air conditioning). Nevertheless, the state's Building Assistance Fund provided monies to rebuild CHS, but did not provide the money to fix VWHS. During more than a decade after CHS was rebuilt, the Van Wert school district tried three times to levy money for a new school through school bond elections. However, these efforts failed due to a lack of support from local voters. Frequent discussions in the media of efforts by VWHS to replace their deteriorating buildings kept the economic disparity between the school districts before the public (Board reviews, 1993; Many in district, 1994; Voters pass, 2001). Over time, the rift between the school districts spilled over into other aspects of community relations, including sports. Thus, we expected VWHS students to express their resentment toward the ('preppie') CHS students on any issues that were directly or indirectly related to the quality of school facilities. Due to media coverage, CHS students knew that VWHS students were envious of them. However, they also had no reason to doubt that they were in a secure and fortunate position compared to the ('downtown') students at VWHS. They had their new school, and no one was going to take it from them.

Method

Participants Data were collected from students at both the Van Wert and Crestview high schools. Participants were 40 students at the disadvantaged school (Van Wert High: 24 males and 16 females; $M = 16$ years; age range = 15 to 19) and 67 students at the advantaged school (Crestview High: 29 males and 38 females; $M = 16$ years; age range = 14 to 18). All participants were volunteers.

Procedure Participants were informed that this project was part of a larger research program investigating group relations. Within each school, data were collected on the same day during morning study halls. Each person

completed a measure of social identification with the in-group school, and indicated his or her own positions on six school related issues. Individuals were then randomly assigned to either estimate the attitude positions of the in-group school on the six issues, or the attitude positions of the rival out-group school, or the positions of an irrelevant, control out-group school.[2] In a fourth condition, persons were assigned to a no-projection control group. After all estimates were completed, and thoughts linked to these estimates were listed, measures of opinion certainty and issue importance were completed (counterbalanced between participants). Finally, information about gender and age were collected.

Materials Four items assessed social identification with the in-group school (1 = *Strongly Disagree*; 4 = *Strongly Agree*): 'I feel a sense of belongingness with other students at this school'; 'I am proud to belong to this school'; 'I feel a sense of cooperation with other students at this school'; 'I identify with other students at this school'. The average of these items formed a reliable index ($\alpha = .79$) comparable to similar measures used by others (Doosje, Spears, & Ellemers, 2002).

On the next page of the packet, participants indicated their agreement with six issues concerned with student life (1 = *Strongly Disagree*; 4 = *Neutral*; 7 = *Strongly Agree*). The issues were developed from interviews with the principals of the participating schools, recent alumni, and students. Thus, the present study is a departure from previous research on social projection and opinion certainty that used issues derived from popular media (Holtz, 2004, 2003). Those issues, although important, were less likely to have been thought about or discussed by participants compared to the on-going student concerns addressed in the present research. No person interviewed was a participant in the final study. The issues focused on continuing off-campus lunch privileges (when contact between the schools occurred), adding more time for these lunch periods, prohibiting sports competitions between county schools to improve relations, sharing school facilities, increasing the number of surprise drug searches at school, and instituting year-round schooling in all county schools.

On separate, subsequent pages of the packet, each of the six issues was stated again. This time, however, participants received written instructions to estimate the position of other in-group members on the issue, or members of the rival out-group, or members of the control out-group. The estimated positions ranged from 1 = *Strongly Disagree* to 4 = *Neutral* to 7 = *Strongly Agree*. In the no-projection control condition, each issue was stated again, but without instructions to estimate anyone else's position. Each issue statement was printed on a separate page so that participants could list the thoughts they had during the time that they estimated the positions of their respective projection target. Persons in the no-projection control condition listed the thoughts they had during the time they indicated their own position. Instructions for coding all thoughts were written on two pages following the estimation and thought-listing tasks (Cacioppo & Petty, 1981). First, participants coded each thought for whether it pertained to: oneself (1), information about the issue (2), the present situation or context (3), one or more persons at the home school (4), one or more persons at the disadvantaged/advantaged rival out-group school (5), or one or more persons at the control out-group school (6). Second, each thought was also coded for whether it was positive, neutral, or negative.

Next, participants indicated how certain they were about their own positions on the issues using a scale anchored by *Very Uncertain* (1), *Moderately Certain* (4), and *Very Certain* (7). On a separate page, they rated the importance of each issue (*Very Unimportant* (1), *Moderately Important* (4), and *Very Important* (7)). These two pages were counterbalanced, although preliminary analyses showed no effect for their order of presentation. Therefore, the data were averaged across this factor. On the last page, participants indicated their gender and age.

Results

Scores on the four social identity items were averaged for each participant. A 2 × 4 (group

deprivation × projection target) between-subjects analysis of variance (ANOVA) conducted on these social identity scores showed no effects. Thus, the strength of in-group identification at the disadvantaged school ($M = 2.62$, $SD = 0.79$) was equivalent to that at the advantaged school ($M = 2.63$, $SD = 0.72$). Preliminary analyses also showed no effects for gender in this study, so the data are averaged across this variable.

Attitude projection Participants from both groups are expected to assume greater attitude similarity to their in-group than to their rival out-group or to the control out-group. On the other hand, the estimation of attitude positions in the rival out-group target condition should reveal attitude contrast (i.e. negative self–other correlations) when disadvantaged group members project onto their relevant advantaged out-group; and we expect reduced similarity to out-group members (i.e. low positive or near-zero correlations) when the advantaged group estimates the attitude positions of their relevant disadvantaged out-group. These ideas are tested by idiographic analyses of the self–other correlation coefficients computed for each participant across the set of issues. Nomothetic analyses of coefficients computed for each item across participants are also presented (Clement & Krueger, 2002, Study 1). The within-participant coefficients allow relationships to be assessed between projection, types of thoughts, and opinion certainty. Analyses of the between-participant coefficients examine whether projection occurred more on some issues than on others.

Within-participant correlation coefficients Each participant's self-ratings across the six issues were correlated with the attitude positions that the individual attributed to a projection target. Note that no data were available for this analysis from participants in the no-projection control condition. Inspection of the coefficients within the disadvantaged and advantaged groups revealed that several individuals estimated a perfect correspondence between their own attitude positions and those held by their in-group.[3] These estimations skewed the distributions of scores in the in-group target conditions. Furthermore, Fisher *Z* transformations of these scores did not remove the in-group target skew. In the other target conditions, Fisher *Z* transformations did produce approximately normal distributions. Thus, the Kruskal–Wallis *H*-test was used to determine the effect of projection target on the median (instead of the mean) correlation coefficients within the disadvantaged and advantaged participant groups.[4] Pairwise comparisons were conducted using the Mann–Whitney *U*-test (all tests are two-tailed). The median and mean values are presented in Table 1. A stem and leaf display of the original correlation coefficients is presented in Figure 1 for each of the 2 × 3 (group deprivation × projection target) conditions.

An initial Kruskal–Wallis test conducted on the pooled data from both groups showed that the estimation of in-group attitude positions ($Mdn = .93$) produced greater assumed similarity than the estimation of rival out-group attitudes ($Mdn = .43$; $U = 140.00$, $p < .001$) or the estimation of control out-group attitudes ($Mdn = .48$; $U = 157.50$, $p < .001$), ($\chi^2(2, N = 80) = 15.89$, $p < .001$). Estimations of attitude similarity between the two out-group targets did not differ.

Within the disadvantaged group, the targets of attitude projection produced a different pattern of outcomes ($\chi^2(2, N = 30) = 16.74$, $p < .001$). As predicted, a self-other contrast effect was found among disadvantaged participants who estimated the attitude positions of their advantaged out-group ($Mdn = -.60$). Hence, assumed similarity to in-group members ($Mdn = .99$) differed from assumed dissimilarity to the rival advantaged out-group ($U = 5.00$, $p < .001$). Also, low assumed similarity to the control out-group ($Mdn = .12$) differed from assumed similarity to in-group members ($U = 14.00$, $p < .006$) and from assumed dissimilarity/contrast to the advantaged rival out-group ($U = 15.00$, $p < .008$). On the other hand, within the advantaged group, assumed similarity to the rival disadvantaged out-group ($Mdn = .63$) was only marginally reduced from the level found in the in-group target condition ($Mdn = .90$; $U = 86.00$, $p < .13$); and it did not

Table 1. Within-participant projection coefficients as a function of group deprivation and projection target

	Target of projection			
Group deprivation	In-group	Rival out-group	Control out-group	Pooled
Disadvantaged				
Mdn r	$.99_{a}$	$-.60_{b}$**	$.12_{c}$	.12
M r	$.73_{a}$	$-.46_{b}$**	$.12_{c}$	.13
SD	.49	.42	.47	.67
Advantaged				
Mdn r	.90	$.63_{d}$	$.60_{d}$*	.65
M r	.70	$.57_{d}$	$.52_{d}$**	.59
SD	.37	.36	.38	.65
Pooled				
Mdn r	$.93_{a}$**	$.43_{bd}$	$.48_{cd}$	
M r	$.72_{a}$**	$.20_{bd}$	$.38_{cd}$	
SD	.41	.63	.45	

Notes: All *r* values are within-participant correlation coefficients. Within each row and each column, mean or median *r* values with different subscripts differ from each other: ** $p < .01$; * $p < .05$.

	Target of Projection		
Group deprivation	In-group	Rival out-group	Control out-group
Disadvantaged	–0.5	–0.566779	–0.55
	0.3	–0.123	–0.01
	0.78999	0.4	0.0234
	1.000		0.77
Advantaged	–0.1	–0.4	–0.24
	0.234	0.11	0.22
	0.568999	0.3	0.44555
	1.0000	0.4455	0.66677
		0.6667	0.8999
		0.889999	
Pooled	–0.5	–0.9	–0.455
	–0.1	–0.6677	–0.2
	0.2334	–0.45	–0.01
	0.56788999999	–0.23	0.0
	1.0000000	–0.1	0.2223
		0.11	0.444555
		0.3	0.6667777
		0.44455	0.8999
		0.6667	
		0.889999	

Figure 1. Stem and leaf displays of the within-participant correlation coefficients as a function of group deprivation and projection target.

differ from assumed similarity to the control out-group (*Mdn* = .60) ($\chi^2(2, N = 50) = 3.66$, $p < .17$). This finding is consistent with the idea that advantaged group members tend not to perceive (or to downplay) differences between themselves and their disadvantaged out-group. Nevertheless, the reduced assumed similarity that advantaged participants projected onto their disadvantaged out-group strongly differed from the assumed dissimilarity/contrast that disadvantaged participants projected onto them ($U = 9.00$, $p < .001$). Likewise, assumed similarity to the control out-group also differed between the advantaged and disadvantaged groups ($U = 43.50$, $p < .03$). In the latter target condition, disadvantaged participants estimated a near-zero relationship between their own attitude positions and the positions held by control out-group members; whereas advantaged participants estimated moderate similarity to the control out-group. No difference was found between participant groups regarding assumed similarity to in-group members.[5]

Between-participant correlation coefficients. An alternative way to assess social projection is to correlate participants' own attitude positions with their estimations of a target's position separately for each of the six issues. Nonparametric analyses can then be conducted on the median coefficient within each of the 2 × 3 (group deprivation × projection target) conditions in which participants received an opportunity to project.[6] This method will indicate whether contrast projection by disadvantaged group members is linked to specific issues, or occurs indiscriminately regardless of issue.

A Kruskal–Wallis analysis of the between-participant correlation coefficients pooled across the disadvantaged and advantaged groups showed findings similar to those using within-participant coefficients ($\chi^2(2, N = 36) = 12.91$, $p < .002$). Individuals assumed greater attitude similarity to in-group members (*Mdn* = .73) than to rival out-group members (*Mdn* = –.10; $U = 20.00$, $p < .003$) or to control out-group members (*Mdn* = .19; $U = 20.00$, $p < .003$). Attitude projection did not differ between the two out-group target conditions. Table 2 presents the median and mean between-participant coefficients.

Also consistent with the earlier analyses, disadvantaged group members strongly differentiated between the respective targets of

Table 2. Between-participant projection coefficients as a function of group deprivation and projection target

	Target of projection			
Group deprivation	In-group	Rival out-group	Control out-group	Pooled
Disadvantaged				
Mdn r	$.84_{a}$	$-.55_{b}$**	$-.06_{cd}$	.09
M r	$.75_{a}$	$-.45_{b}$**	$.11_{cd}$	.14
SD	.21	.27	.49	.60
Advantaged				
Mdn r	.63	$.30_{d}$	$.22_{d}$*	.34
M r	$.62_{ae}$	$.35_{ed}$	$.24_{d}$**	.40
SD	.29	.41	.25	.35
Pooled				
Mdn r	$.73_{a}$**	$-.10_{d}$	$.19_{d}$	
M r	$.69_{a}$**	$-.05_{d}$	$.17_{d}$	
SD	.25	.53	.38	

Notes: All *r* values are between-participant correlation coefficients. Within each row and each column, mean or median *r* values with different subscripts differ from each other: ** $p < .01$; * $p < .05$.

projection ($\chi^2(2, N = 18) = 12.36$, $p < .002$). Importantly, they estimated dissimilarity/contrast between themselves and their rival advantaged out-group ($Mdn = -.55$). The projection of contrast in this condition did not overlap with assumed attitude similarity to in-group members ($Mdn = .84$; $U = .00$, $p < .004$) and it differed from attitude projection onto the control out-group ($Mdn = -.06$; $U = 3.00$, $p < .02$). Attitude projection differed between the latter two conditions as well ($U = 4.00$, $p < .03$). Interestingly, disadvantaged group members did not estimate contrast between their own attitude positions and the positions they attributed to their rival out-group on every issue. Contrast projection was clearly evident on the issues that supported off-campus lunch privileges ($r = -.61$, $p < .03$; these tests are one–tailed), extended time for these lunch periods ($r = -.57$, $p < .04$), the sharing of school facilities and resources ($r = -.64$, $p < .03$), and year-round schooling ($r = -.68$, $p < .02$). Self-other contrast was not explicit when the issue favored more surprise drug searches at school ($r = -.34$, $p < .17$) and the prohibition of sports competitions to improve interschool relationships ($r = .05$, $p < .45$). These results could suggest that disadvantaged participants expected disagreement between themselves and their rival out-group concerning cooperative contact (in local eating establishments or at school), but not competitive contact (sports). However, the issues that evinced assumed disagreement also directed attention to school facilities that were comparatively inadequate for the disadvantaged group (e.g. poor eating accommodations and the lack of air-conditioning for summer schooling).

A Kruskal–Wallis analysis of the between-participant correlations for the advantaged group showed only a marginal difference between the in-group ($Mdn = .63$), rival out-group ($Mdn = .30$), and control out-group ($Mdn = .22$) target conditions ($\chi^2(2, N = 18) = 3.26$, $p < .20$). On the other hand, within the rival out-group target condition, the self-other contrast projections of disadvantaged participants clearly differed from the reduced similarity projections of advantaged participants ($U = 1.00$, $p < .004$).

Thought-listings Evidence convergent with the attitude projection results came from the thoughts that participants listed during the time that they estimated others' attitudes. Consistent with their projection of attitude contrast, disadvantaged group members should have more negative thoughts than positive or neutral thoughts about their relevant advantaged out-group in the rival out-group target condition. In this target condition, advantaged participants might also have negative thoughts about their disadvantaged out-group. However, their negative thoughts are likely to be complemented by positive thoughts that indicate a more ambivalent intergroup mind-set. In the in-group target condition, both participant groups are expected to experience a higher frequency of positive thoughts about their in-group than either negative or neutral thoughts.[7]

Analyses of the thoughts participants had during attitude projection were conducted by first averaging each of the six types of thoughts across the six issues, separately for each person, within each positive, negative, and neutral valence category. The Wilcoxon Signed Ranks Test for matched pairs (all tests are two-tailed) showed that disadvantaged group members who estimated the attitudes held by their advantaged out-group had more negative than positive thoughts about the advantaged out-group ($Z = -2.23$, $p < .03$). They also had more negative thoughts than neutral thoughts about their advantaged out-group ($Z = -1.91$, $p < .06$). No difference was found between the frequencies of positive and neutral thoughts of disadvantaged participants who projected onto their advantaged out-group. On the other hand, advantaged participants who estimated the attitudes of their disadvantaged out-group had positive thoughts and negative thoughts ($Z = -0.28$, ns) about their out-group. Negative thoughts about the disadvantaged out-group were more frequent than neutral thoughts ($Z = -2.264$, $p < .05$); and positive thoughts were more frequent than neutral thoughts ($Z = -2.032$, $p < .05$). These means are presented in Table 3. Across disadvantaged and advantaged participants, attitude projections onto rival

Table 3. Mean frequency of positive, negative, and neutral thoughts about in-group and rival out-group members as a function of group deprivation and projection target

	Target of projection				
Group deprivation	In-group	Rival out-group	Control out-group	No target (control)	Pooled
Thoughts about in-group members					
Disadvantaged					
Positive	$.67_a$*	.05	.10	.57	$.35_a$**
Negative	.32	.02	$.22_a$*	.25	$.20_a$*
Neutral	$.13_b$	.00	$.02_b$	.07	$.05_b$
Advantaged					
Positive	$.38_a$*	$.22_a$*	.08	$.34_a$	$.25_a$**
Negative	$.01_b$	.06	.02	$.16_b$*	$.06_b$
Neutral	$.02_b$	$.02_b$	.03	$.04_b$**	$.03_b$
Pooled					
Positive	$.50_a$**	.16	.09	$.43_a$**	$.29_a$**
Negative	$.14_b$	.05	.09	.19	$.12_b$*
Neutral	$.07_b$	.01	.02	$.05_b$	$.04_c$
Thoughts about rival out-group members					
Disadvantaged					
Positive	.02	$.08_b$	.05	.03	.05
Negative	.02	$.32_a$*	.02	.02	.09
Neutral	.02	$.08_b$	.00	.00	.03
Advantaged					
Positive	.04	$.11_a$*	.00	.05	.05
Negative	.00	$.15_a$*	.01	.03	.05
Neutral	.02	$.03_b$	.00	.03	.02
Pooled					
Positive	.03	.10	.02	.04	.05
Negative	.01	$.21_a$*	.01	.02	.06
Neutral	.02	$.05_b$	.00	.02	.02

Notes: Higher means indicate greater frequency of thoughts. For each disadvantaged or advantaged group, within each column, means with different subscripts differ from each other: ** $p < .01$; * $p < .05$.

out-group members were inversely correlated with negative thoughts about that out-group ($r_s(26) = -.51$, $p < .003$, one-tailed).

In the in-group target condition, disadvantaged group members had more positive thoughts about in-group members than neutral thoughts ($Z = -2.254$, $p < .03$). However, their positive thoughts about in-group members did not exceed the frequency of negative thoughts about their group ($Z = -1.126$, ns). Likewise, no difference was found between the frequency of negative thoughts about in-group members and the frequency of neutral thoughts about the in-group ($Z = -0.57$, ns). On the other hand, advantaged group members who estimated the attitude positions of their in-group had more positive thoughts about their own group than either negative thoughts ($Z = -2.53$, $p < .02$) or neutral thoughts ($Z = -2.50$, $p < .02$). Furthermore, the frequencies of thoughts in the later two categories did not differ.[8] These means are also presented in Table 3. Overall, assumed similarity to in-group members correlated positively with positive thoughts about the in-group ($r_s(22) = .42$, $p < .02$, one-tailed).

Opinion certainty The findings for social projection and the thought-listings encouraged

examination of opinion certainty as an outcome of the estimation of target attitude positions. We expected disadvantaged group members to be more certain about their opinions following the estimation of attitude contrast between themselves and members of their advantaged out-group, compared to their participation in either the control out-group condition or the no-projection condition. On the other hand, the opinion certainty of advantaged group members who estimated the attitude positions of the disadvantaged out-group should be lower than that of advantaged participants in the control conditions. Finally, pooled across disadvantaged and advantaged groups, assumed consensus with in-group members is expected to augment certainty compared to not receiving any opportunity to engage in attitudinal projection.

These ideas were tested in a 2 × 4 (group deprivation × projection target) between-subjects ANOVA conducted on the opinion certainty scores. Each score indicated the certainty of each participant averaged across the six issues (α = .64 for both groups combined; α = .62 and .71 for the disadvantaged and advantaged groups, respectively). These results show that, overall, advantaged group members were more certain about their attitude positions compared to participants from the disadvantaged group ($F(1,99) = 5.88$, $p < .02$). A main effect for projection target was also found ($F(3,99) = 4.47$, $p < .006$). Pooled across the participant groups, opinion certainty following the estimation of the attitudes of in-group members exceeded the certainty of persons who estimated the attitudes of rival out-group members ($F(1,50) = 8.42$, $p < .006$), persons who estimated the attitudes of control out-group members ($F(1,50) = 8.64$, $p < .005$), or participants in the no-projection control group ($F(1,49) = 5.69$, $p < .02$). The main effects were qualified by an interaction between group deprivation and projection target ($F(3,99) = 11.55$, $p < .0001$). As expected, the opinion certainty of disadvantaged group members who estimated advantaged out-group attitudes was greater than the opinion certainty of disadvantaged group members in the control out-group target condition ($F(1,18) = 31.29$, $p < .0001$), or their opinion certainty in the no-projection control condition ($F(1,18) = 9.27$, $p < .007$). On the other hand, advantaged group members who estimated the attitude positions of their disadvantaged out-group exhibited less certainty than advantaged group members who estimated control out-group attitude positions ($F(1,34) = 8.62$, $p < .006$), or those who participated in the no-projection control condition ($F(1,33) = 7.27$, $p < .01$). Neither the disadvantaged nor the advantaged participants showed any difference in opinion certainty between the control out-group target condition and the no-projection condition. These means and standard deviations are presented in Table 4.

Across disadvantaged and advantaged participants, assumed attitude similarity to in-group members predicted increases in opinion certainty ($r_s(22) = .36$, $p < .05$). On the other hand, self–other estimations of the attitudes held by rival out-group members correlated negatively with opinion certainty ($r_s(26) = -.63$, $p < .0001$). In this target condition, opinion certainty was also predicted by the number of negative thoughts that participants had about their rival out-group ($r_s(26) = .43$, $p < .02$). Furthermore, the relationship between negative thoughts about the rival out-group and opinion certainty was moderated by whether participants were disadvantaged group members who estimated the attitudes of their relevant advantaged out-group ($r_s(8) = .74$, $p < .01$), or advantaged group members who estimated the attitudes of their disadvantaged out-group ($r_s(16) = .23$, *ns*).

These findings indicate that any indirect influence of negative thoughts about a rival out-group in the relationship between intergroup attitude estimation and self-certainty of correctness should be different for disadvantaged and advantaged group members. Mediational analyses recommended by Baron and Kenny (1986) were conducted to test this idea among those individuals who participated in the rival out-group target condition, the neutral/control out-group target condition, and the no-projection condition. First, within each participant group, the relationship between the estimation of out-group attitude positions and opinion certainty was assessed to justify the test of mediation

Table 4. Mean opinion certainty as a function of group deprivation and projection target

	Target of projection				
Group deprivation	In-group	Rival out-group	Control out-group	No target (control)	Pooled
Disadvantaged					
M	4.47_{ac}*	5.32_{a}**	3.38_{b}	3.92_{bc}	4.27
SD	1.17	.81	.73	1.21	1.27
Advantaged					
M	5.88_{d}**	3.70_{e}**	4.81_{f}	4.77_{bf}	4.73
SD	.59	1.12	1.13	1.23	1.29
Pooled					
M	5.29_{d}	4.28_{f}**	4.30_{f}**	4.46_{bf}*	
SD	1.22	1.28	1.21	1.27	

Notes: Higher means indicate greater certainty. Within each row and column, means with different subscripts differ from each other: ** $p < .01$; * $p < .05$. In each disadvantaged group cell, $n = 10$. Advantaged group cell *n*s range from 14 to 18.

(disadvantaged: $\beta = -.47$; $t(29) = -2.84$, $p < .008$; advantaged: $\beta = .36$; $t(52) = 2.71$, $p < .009$). Second, we established that the target of attitude projection predicted negative thoughts about the rival out-group within each set of participants (disadvantaged: $\beta = -.54$, $t(29) = -3.43$, $p < .002$; advantaged: $\beta = -.30$; $t(52) = -2.20$, $p < .03$). The third and fourth steps demonstrated that negative thoughts about the rival (advantaged) out-group remained a significant predictor of opinion certainty for disadvantaged participants ($\beta = .48$; $t(29) = 2.65$, $p < .02$) when considered simultaneously with the effect of projection target on opinion certainty; although the relationship between negative thoughts about the advantaged out-group and opinion certainty completely mediated the relationship between projection target and opinion certainty ($\beta = -.21$, $t(29) = -1.18$, *ns*). Among advantaged participants, however, these analyses demonstrated no relationship between negative thoughts about the rival (disadvantaged) out-group and opinion certainty ($\beta = -.02$; $t(52) = -.17$, *ns*) when such thoughts were considered simultaneously with the effect of projection target on opinion certainty. Instead, the relationship between projection target and opinion certainty remained significant ($\beta = .35$; $t(52) = 2.52$, $p < .02$). Aroian tests provided further evidence that negative thoughts about the advantaged out-group completely mediated the effect of the manipulation of out-group target of projection on opinion certainty for disadvantaged participants ($z = -2.11$, $p = .03$); and that the opinion certainty of advantaged participants was not related to negative thoughts about their disadvantaged out-group ($z = .16$, $p = .87$).

Issue importance We expected the low opinion certainty of advantaged group members who estimated the attitude positions of their disadvantaged out-group to be juxtaposed to low ratings of issue importance. This prediction was examined using a 2 × 4 (group deprivation × projection target) between-subjects ANOVA conducted on the importance ratings averaged across the issues for each person (disadvantaged group: range = 2.88 to 6.03; advantaged group: range = 3.55 to 4.71). The analysis showed a main effect for target of projection ($F(3, 99) = 2.83$, $p < .05$), and an interaction between target of projection and group deprivation ($F(3, 99) = 3.29$, $p < .03$). Ratings of issue importance pooled across the disadvantaged and advantaged groups were lower in the rival out-group target condition than in either the in-group target condition ($F(1, 50) = 9.60$, $p < .003$), the control out-group target condition ($F(1, 54) = 4.71$, $p < .034$), or the no-projection condition ($F(1, 53) = 7.33$, $p < .009$). Simple effects analyses of projection target conducted on the importance ratings

of disadvantaged group members showed that these participants did not differ in their mean ratings of issue importance across the in-group, rival out-group, control out-group, and no-projection conditions of attitude estimation ($F(3, 36) = 1.46$ *ns*). However, the pattern of findings for the advantaged participants paralleled those found for the pooled data ($F(3, 63) = 6.07$, $p < .001$). That is, advantaged group members judged the issues as less important after they estimated the attitudes held by their disadvantaged out-group than after estimations of the in-group target ($F(1,30) = 15.34$, $p < .001$), the control out-group target ($F(1, 34) = 14.14$, $p < .001$), or participation in the no-projection control condition ($F(1, 33) = 9.11$, $p < .005$). On the other hand, disadvantaged group members who estimated the attitudes of the control out-group target rated the issues as less important than advantaged participants did in the same target condition ($F(1, 26) = 5.60$, $p < .026$). This makes sense if one considers the lack of attitudinal relationship that disadvantaged participants projected between themselves and the control out-group. These means and standard deviations are presented in Table 5. Among advantaged group members, issue importance ratings were predicted by negative thoughts about the disadvantaged out-group ($r_s(65) = -.21$, $p < .05$). No such relationship between negative thoughts about the rival out-group and issue importance was found for disadvantaged group members ($r_s(38) = .09$, *ns*).

Discussion

This study of two relatively deprived high schools shows clear evidence of contrast projection by disadvantaged group members. Not only did the disadvantaged group estimate that their advantaged out-group disagreed with most of their attitude positions, but increments in the opinion certainty of disadvantaged group members followed the projection of intergroup disagreement. Mediation analyses demonstrated that the relationship between intergroup attitude projection and opinion certainty was accounted for by the negative thoughts disadvantaged group members had about their advantaged rival out-group. No evidence of intergroup contrast projection was found among members of the advantaged group. Instead, these participants estimated only somewhat less similarity between themselves and their disadvantaged out-group than between themselves and their in-group. Furthermore, they evinced ambivalence about the correctness of their own attitude positions after considering the positions held by the disadvantaged group.

The projection scores computed for each participant across all of the issues (i.e. the within-participant correlation coefficients) indicated that assumed attitude contrast is a

Table 5. Mean issue importance as a function of group deprivation and projection target

	Target of projection				
Group deprivation	In-group	Rival out-group	Control out-group	No target (control)	Pooled
Disadvantaged					
M	4.53_{ac}	4.17_{c}*	3.68_{c}*	4.43_{ac}	4.20
SD	1.24	1.02	.73	.93	1.01
Advantaged					
M	4.44_{a}	3.40_{b}**	4.55_{a}	4.34_{a}	4.16
SD	.66	.81	1.01	1.03	1.00
Pooled					
M	4.48_{a}	3.67_{b}*	4.24_{a}	4.38_{a}	
SD	.92	.95	1.00	.98	

Notes: Higher means indicate greater issue importance. Within each row and column, means with different subscripts differ from each other: ** $p < .01$; * $p < .05$.

robust response to inequity by disadvantaged group members. However, analyses of projection computed issue-by-issue across participants (i.e. the between-participant correlation coefficients) revealed that contrast projection also varies according to specific issues. In the present study, disadvantaged group members apparently did not apply a general rule of 'they want anything we don't want' (and vice versa). Issues that did not elicit contrast projection either did not evoke interschool comparisons (e.g. surprise drug searches) or recommended that fun activities be abolished (sports competitions). In the latter instance, the issue represented a double-barreled problem wherein sports competitions were to be prohibited for the purpose of improving interschool relationships. Thus, it is unclear whether disadvantaged group members could not envisage intergroup disagreement about abolishing competitive sports or improving school relations.

Finding that disadvantaged group members can differentiate between issues that imply more or less intergroup disagreement does not rule out the influence of generalized expectancies in contrast projection, especially in the context of long term RD. Such stereotypical thinking can be activated by experiences ranging from a direct confrontation between groups to the mere consideration of issues bearing on a sensitive group inequity (Kunda & Spencer, 2003). Several of the issues used as the basis for projection in the present study could be perceived as directly or indirectly relevant to the problem of inadequate and outdated school facilities—the root of the long-standing RD dispute. Furthermore, although participant attributes were randomly distributed between target of projection conditions within the respective disadvantaged and advantaged groups, a natural event precipitated the RD conflict. Thus, the groups were already defined by preexisting experiences and social class before this research began.

An experimental test of the influence of relative deprivation on attitudinal contrast projection would allow the onset of RD to be controlled. By employing this method, the connection between disadvantaged status, resentment, and assumed disagreement from advantaged out-group members can be corroborated. Such a study also allows the effect of assumed intergroup disagreement on opinion certainty to be replicated. Thus, Study 2 is a laboratory experiment designed to test further the effects of RD suggested by Study 1. In Study 2, the effects of RD are measured immediately to minimize the impact of escalating hostilities and stereotype development over time. Hence, the type of issue that evokes the estimation of intergroup contrast can be clarified. Based on the results of Study 1, we expect that disadvantaged group members will differentiate between issues in terms of their relevance to the RD conflict.

Study 2

In Study 2, relative group deprivation was created by designating one group to have greater power and privilege than another group. The sense of unfairness among members of the disadvantaged group could be anticipated not only from their lower status and restricted access to power, but also from the procedural unfairness that characterized the RD decision (Tyler & Smith, 1998). In this study, membership in either the disadvantaged or the advantaged group ostensibly depended upon which university class, freshmen or sophomores, university administrators were trying to retain at college. School policy was manipulated to favor either the freshman class or the sophomore class at the expense of students in the alternate category. The issues on which attitude projection was based addressed a variety of concerns faced by university students. However, only two of these issues had any relevance to the distribution of resources between the relatively deprived groups. Therefore it is on these two issues that the projection of attitude contrast from advantaged out-group members is expected, followed by issue specific increases in the opinion certainty of disadvantaged group members.

Method

Participants and design The participants were 145 freshmen (75% female) and 86 sophomores (78% female) at the University of Florida who

received credit toward partial fulfillment of a course requirement. Each person was randomly assigned to a 3 (group deprivation: disadvantaged, advantaged, or equal status) × 3 (projection target: in-group, out-group, or no-projection) between-subjects factorial design.

Procedure Each experimental session included 15 to 20 participants who began by completing a four-item measure of social identification with their university class. After indicating gender and age, each person also read a short, fictional statement describing the problem of student retention at UF. The statement indicated that 28% of students who start their education at UF drop out before their third year. The dropout rate was blamed for diverting money away from new programs and technologies to recruit and remediate new students; it was also blamed for pressure to lower entrance standards that would devalue the UF bachelor's degree. The members of each class were then randomly assigned to evaluate one of three policies deliberately designed to manipulate relative deprivation between freshmen and sophomores.

Each of the three policies was presented as a strategy to facilitate the retention of students. Two of these policies adopted preferential treatment of either freshmen or sophomores to achieve that goal. To wit, starting immediately, one class (counterbalanced to be either freshmen or sophomores) was to receive 9% of the senators in student government (disadvantaged), while the other class (either sophomores or freshmen) received 51% of the senate positions (advantaged). A third, control policy gave each class 30% of the senators (equal power). To increase involvement, it was noted that student government controlled all parking and housing regulations at UF, as well as the choice of performances and other events that are booked on campus. Additional perks for the advantaged class included first access to class scheduling and more tutors. The advantages or disadvantages assigned to a class were promised to remain with that class until graduation. At this point, manipulation checks of perceived fairness and resentment were completed.

Next, all participants indicated their own positions on six issues related to student life, including *two* issues about the distribution of university money between the freshman and sophomore classes. Participants were then randomly assigned to estimate the attitude positions of their in-group, the out-group class, or they did not receive an opportunity to project. Finally, the dependent measures of opinion certainty and issue importance were completed; and participants were debriefed.

Materials Social identification with the freshman or sophomore class was measured by asking participants how much they identify with their class, feel a sense of belongingness, experience ties to their classmates, and feel glad to be a member of their class. All items used a response scale anchored by *Not At All* (1), *Moderately Strong* (4), and *Very Strong* (7).

The manipulation checks included two items. The first asked: 'How fair to your class are these changes in UF policies?' with a scale anchored by *Very Unfair* (1), *Neutral* (4), and *Very Fair* (7); the second item asked: 'How much do you expect your class to resent these changes in UF policies?' with a scale anchored by *Not At All* (1), *Neutral* (4), and *Very Much* (7).

On the page following the manipulation checks, participants indicated their agreement with six issues concerned with student life using a scale anchored by *Strongly Disagree* (1), *Neutral* (4), and *Strongly Agree* (7). The issues concerned whether the primary purpose of attending UF is to get a good job, whether textbook reading is less useful now that the internet exists, whether additional money should be allocated to programs that target the special needs of UF freshmen, whether it is easy to bluff on college homework assignments, whether eligibility for student aid at UF should be made stricter, and whether additional money should be allocated to programs that target the special needs of UF sophomores. The items concerning additional monies for freshmen and sophomores were intentionally relevant to the RD manipulation.

On the next page of the packet, participants received written instructions either to estimate the positions of other in-group members or to estimate the positions of the out-group class. The estimated positions ranged from *Strongly*

Disagree (1) to *Neutral* (4), to *Strongly Agree* (7). A control condition was added in which participants were not asked to estimate the positions of others.

Finally, participants indicated their opinion certainty using a scale anchored by *Very Uncertain* (1), *Moderately Certain* (4), and *Very Certain* (7). On a separate page, they rated the importance of each issue using a scale anchored by *Very Unimportant* (1), *Moderately Important* (4), and *Very Important* (7). The measures of certainty and issue importance were counterbalanced, but no effect for order of presentation was found. Thus, the data were averaged across this factor.

Results

Preliminary analyses conducted on the outcome measures showed no effects for gender or university class, so the data are averaged across these variables. In addition, scores on the four social identity items were averaged for each participant ($\alpha = .86$). They showed equivalent social identification within the freshman class ($M = 4.77$, $SD = 1.15$) and within the sophomore class ($M = 4.55$, $SD = 1.30$) ($F(1,229) = 1.76$, *ns*).

Manipulation checks As expected, a 3 × 3 (group deprivation × projection target) between-subjects ANOVA conducted on the measure of perceived fairness of the new university policy only showed a main effect for group deprivation ($F(2,222) = 45.52$, $p < .001$). Disadvantaged participants ($M = 3.28$, $SD = 1.21$) perceived university policy as less fair than advantaged participants did ($M = 4.64$, $SD = 1.44$) ($F(1,146) = 38.04$, $p < .001$), and less fair than equal status participants did ($M = 5.25$, $SD = 1.18$) ($F(1,152) = 104.02$, $p < .001$). Interestingly, advantaged participants perceived the policy as less fair than equal status participants ($F(1,158) = 8.84$, $p < .01$).

A main effect of group deprivation was also the only result of a 3 × 3 (group deprivation × projection target) between-subjects ANOVA conducted on the resentment scores ($F(2,222) = 20.33$, $p < .001$). Disadvantaged participants anticipated more in-group resentment ($M = 4.11$, $SD = 1.55$) than advantaged participants did ($M = 2.83$, $SD = 1.46$) ($F(1,146) = 26.85$, $p < .001$), and more resentment than equal status participants did ($M = 2.75$, $SD = 1.29$) ($F(1,152) = 34.80$, $p < .001$). No difference was found between advantaged and equal status participants in terms of expected in-group resentment ($F(1,158) = .11$, *ns*).

Attitude projection

Between-participant correlation coefficients Disadvantaged group members who estimated the attitude positions of their advantaged out-group are the only persons who should exhibit contrast projection. Furthermore, even among these participants, attitude contrast projection is expected only on the issues that relate to the distribution of resources between the freshman and sophomore classes. To test these ideas, participants' own attitude positions were correlated with their estimations of a target's position separately for each of the six issues. Indeed, the only negative self–other correlations found in this study concerned the two issues calling for money to support special programs for freshmen/sophomores in the disadvantaged group/out-group projection condition (freshman programs: $r = -.461$, $p < .04$; sophomore programs: $r = -.455$, $p < .04$; all tests are two-tailed). Within this experimental condition, the self–other correlations for the remaining items are as follows: attending UF to get a job ($r = .64$, $p < .002$); the usefulness of reading textbooks ($r = .39$, $p < .08$); bluffing on homework assignments ($r = .51$, $p < .02$); and stricter UF financial aid guidelines ($r = .47$, $p < .04$). Therefore, nomothetic analyses were conducted using only the two issues relevant to the RD conflict between freshmen and sophomores.

A 3 × 2 (group deprivation x projection target) between-subjects ANOVA was conducted on the relevant between-participant correlation coefficients averaged within each experimental condition. No data were available for this analysis from persons who did not receive an opportunity to estimate the attitudes of others. The results showed main effects for group deprivation ($F(2,6) = 24.68$, $p < .001$), and projection target ($F(1,6) = 118.96$, $p < .001$). These were qualified by a group deprivation × projection target

interaction effect ($F(2,6) = 25.51$, $p < .001$). Overall, participants assumed greater similarity between themselves and in-group members ($M = .61$, $SD = .10$) than between themselves and out-group members ($M = .04$, $SD = 0.41$). However, within the out-group target condition, disadvantaged group members who estimated the attitude positions of their advantaged out-group assumed greater self-other disagreement ($M = -.46$, $SD = .004$) than advantaged group members who estimated the positions of their disadvantaged out-group ($M = .16$, $SD = .04$) ($F(1,2) = 462.80$, $p < .002$). Furthermore, the estimation of attitudes held by an equal status out-group ($M = .43$, $SD = .04$) produced greater assumed intergroup similarity than that found in either the disadvantaged group/advantaged out-group target condition ($F(1,2) = 1186.71$, $p < .001$), or the advantaged group/disadvantaged out-group target condition ($F(1,2) = 49.11$, $p < .02$). These mean correlations and standard deviations are presented in Table 6.

Table 6. Between-participant projection coefficients as a function of group deprivation and projection target (Study 2)

	Target of projection		
Group deprivation	In-group	Out-group	Pooled
Disadvantaged			
M r	$.63_b$	$-.46_a$*	.09
SD	.21	.004	.64
Advantaged			
M r	$.58_b$	$.16_c$	.37
SD	.02	.04	.24
Equal status			
M r	$.64_b$	$.43_b$	.53
SD	.02	.04	.12
Pooled			
M r	$.61_b$	$.04_c$	
SD	.10	.41	

Notes: All *r* values are between-participant correlation coefficients. If the in-group is disadvantaged, the out-group target is advantaged (and vice versa). Within each row and each column, mean *r* values with different subscripts differ from each other: * $p < .05$.

Opinion certainty We expected intergroup contrast projection (assumed disagreement) to augment the opinion certainty of disadvantaged group members. Certainty ratings were averaged across the two relevant items for each participant ($\alpha = .73$). Then, a 3 × 3 (group deprivation × projection target) between-subjects ANOVA was conducted on these certainty scores which showed the expected interaction ($F(4,222) = 3.47$, $p < .01$), but no main effects. Assumed disagreement with advantaged out-group members conferred opinion certainty onto disadvantaged group members compared to projection onto in-group members ($F(1,41) = 4.40$, $p < .04$), or participation in the no-projection control condition ($F(1,47) = 17.95$, $p < .001$). In addition, disadvantaged group members who estimated the attitude positions of their advantaged out-group exhibited greater opinion certainty than advantaged group members who estimated the positions of their disadvantaged out-group ($F(1,46) = 10.63$, $p < .002$), or persons who estimated the positions of an equal status out-group ($F(1,43) = 15.46$, $p < .001$). These means and standard deviations are presented in Table 7.

Issue importance The issue importance ratings of the two relevant items were averaged to produce an issue importance score for each participant ($\alpha = .80$). These scores ranged from 4.18 to 5.40. Opinion certainty correlated with these issue importance scores for disadvantaged group members who estimated the attitude positions of their advantaged out-group ($r = .53$, $p < .02$) (across all experimental conditions: $r = .40$, $p < .0001$).

Discussion

Consistent with our predictions, Study 2 demonstrates experimentally that disadvantaged group members estimate contrast/disagreement between their own attitude positions and the positions they attribute to an advantaged rival out-group. Furthermore, the results show that contrast projection increases the certainty

Table 7. Mean opinion certainty as a function of group deprivation and projection target (Study 2)

	Target of projection			
Group deprivation	In-group	Out-group	No target	Pooled
Disadvantaged				
M	5.00_{a}*	5.69_{b}**	4.39_{c}	4.96
SD	1.25	.86	1.19	1.23
Advantaged				
M	4.60	4.63_{ac}	4.86	4.69
SD	1.31	1.28	1.35	1.30
Equal Status				
M	4.85	4.44_{ac}	4.88	4.74
SD	1.47	1.22	1.42	1.38
Pooled				
M	4.81	4.88	4.70	
SD	1.35	1.26	1.33	

Notes: Higher means indicate greater certainty. If the in-group is disadvantaged, the out-group target is advantaged (and vice versa). Within each row and column, means with different subscripts differ from each other: ** $p < .01$; * $p < .05$. The simple cell *n*s range from 21 to 31.

disadvantaged group members experience about the correctness of their opinions. Importantly, Study 2 also confirms findings from Study 1 that suggest the projection of intergroup contrast need not encompass an entire spectrum of issues. That is, disadvantaged group members are capable of discriminating between the issues that are relevant to an existing intergroup inequity versus the issues that are not.

General discussion

In two studies, we found support for the idea that relatively deprived groups manifest different assumptions about their relationship with each other. Disadvantaged group members clearly anticipated attitude contrast (disagreement) between themselves and their advantaged out-group. Although both of the studies reported in this research show that disadvantaged participants differentiated between issues that implied more or less intergroup disagreement, the range of assumed disagreement was somewhat greater in Study 1. Partly this reflects the nature of the issues. Several of the issues employed in Study 1 could be viewed as related to the status inequity that characterized the participant groups. Notwithstanding, disadvantaged participants in Study 1 might also have developed vivid negative imagery over time elicited by the structure of the relationship between groups (Alexander, et al., 1999; Kramer & Jost, 2002; Kunda & Spencer, 2003; McGarty, Yzerbyt, & Spears, 2002; Yzerbyt, Rocher, & Schadron, 1977). In either case, members of the disadvantaged group not only projected attitude contrast onto their advantaged out-group, they also had a preponderance of negative thoughts about the advantaged group. These negative thoughts mediated the relationship between intergroup projection and increments in opinion certainty among disadvantaged group members. Conversely, advantaged group members did not reciprocate the contentious attributions of the disadvantaged group. Compared to disadvantaged participants in both Study 1 and Study 2, advantaged individuals assumed greater similarity to their rival out-group members (cf. Clement & Krueger, 2002). Interestingly, assumed similarity to the rival out-group by advantaged participants in Study 1 resembled the intergroup similarity projected by equal status participants in Study 2.

Thus, although one must be cautious about making comparisons between studies, advantaged participants in Study 1 seemed to acknowledge little difference between their own status and that of their disadvantaged out-group.

The estimation of attitude positions held by a rival out-group was expected to influence the opinion certainty of relatively deprived group members, particularly disadvantaged group members. Indeed, both studies showed that the estimation of self–other contrast from the advantaged out-group conferred opinion certainty onto disadvantaged group members compared to their certainty in the control conditions. On the other hand, the estimation of reduced similarity to disadvantaged out-group members (i.e. reduced from levels found in the in-group target condition) decreased the opinion certainty of advantaged participants in Study 1 compared to their certainty in the control groups. This finding that advantaged group members were less certain about their opinions after estimating the attitude positions of their disadvantaged out-group is consistent with studies that show securely advantaged groups minimize the disparity between their own status and that of other less powerful groups (Sachdev & Bourhis, 1985; Tougas & Beaton, 2002). However, questions remain about why advantaged group members in Study 2 did not exhibit a corresponding drop in their opinion certainty following intergroup projection. Perhaps they did not yet realize the implications of their privileged status. Alternatively, advantaged participants in Study 2 had not received enough time or opportunity to enact their newly discovered privilege. Hence, they had no reason to feel guilt or worry or have any other emotion that might cause them to reevaluate the correctness of positions they endorsed on the issues concerning special programs for themselves or their out-group (Leach et al., 2002).

It is important to note here that although advantaged group members in Study 1 did not estimate sharp disagreement between themselves and their disadvantaged out-group, they were not altogether indifferent about their rival or the issues separating the groups. The relationship between the groups had often been acrimonious; and advantaged participants knew that disadvantaged out-group members were envious of them. Therefore, it is not surprising that advantaged group members evidenced ambivalence toward their rival by listing as many negative thoughts about disadvantaged group members as positive thoughts (Katz, 1981; Mackie & Smith, 2002). Neutral thoughts about the disadvantaged out-group were not affected by projection target; nor were the issues considered more unimportant overall by advantaged compared to disadvantaged group members. Instead, the negative thoughts that advantaged participants had about their disadvantaged out-group inversely predicted their ratings of issue importance. According to Montada and Schneider (1989), downgrading the importance of divisive issues is a common response to inequity that epitomizes a subtle, but negative view of relevant disadvantaged out-group members (e.g. 'They should be satisfied with what they have'). In Study 1, advantaged group members who estimated the attitudes of the disadvantaged out-group might have recalled instances of prior conflict (Pemberton, Insko, & Schopler, 1996); or they equivocated about relinquishing their privileged social status in the community (Tajfel & Turner, 1986). Regardless of the reason for their mix of negative and positive out-group thoughts, advantaged participants apparently had reservations about reconciling with their disadvantaged out-group. Their commitment to more equitable outcomes for disadvantaged out-group members seemed tentative based on the importance they affixed to the issues following estimations of their rival's attitude positions.

The pooled outcomes from both participant groups in Study 1 replicated previous work showing that assumed similarity to an in-group increases opinion certainty compared to the level experienced by persons who receive no opportunity to project (Holtz & Miller, 1985). When each participant group is viewed separately, however, this effect was due mostly to the advantaged group members. Although the

disadvantaged and advantaged participants in Study 1 indicated similar levels of social identification with their respective in-groups, the advantaged group may have been more functionally integrated, or cohesive, than the disadvantaged group (Henry, Arrow, & Carini, 1999). This can explain why the estimation of in-group attitudes conferred more certainty onto the advantaged rather than the disadvantaged participants (Holtz, 2004). The same situation may account for the effects of in-group projection in Study 2. Whereas freshmen and sophomores indicated equivalent social identification with their university class, the level of cohesiveness characteristic of these classes at a major university is probably low. Thus, in-group projection showed little positive relationship to opinion certainty in Study 2. It is not possible to know from the present studies whether the cohesiveness of disadvantaged and advantaged group members actually differed. Thus, the interactive effects of in-group cohesion and relative intergroup deprivation on the outcomes of social projection deserve further investigation.

In conclusion, social protest by disadvantaged groups could gain momentum from the opinion certainty conferred by assumed intergroup disagreement. Estimations of attitudinal contrast from a relevant advantaged out-group can fuel the commitment that disadvantaged group members need to achieve their objectives (Nemeth & Wachtler, 1974). On the other hand, advantaged group members may not comprehend or care about the difficulties experienced by their disadvantaged rival. High status groups are likely to view their own social privilege as normative. Thus, complaints about injustice from disadvantaged individuals may be ignored or discounted, even among well-intentioned members of an advantaged group (Major et al., 2002). The cognitive representations that relatively deprived groups develop about each other provide a sufficient basis for social projection processes to operate. Knowledge of how social projection influences disadvantaged and advantaged groups can guide the design of interventions aimed at resolving harmful intergroup inequities.

Notes

1. The social/self-generated bases of these estimations are implied by the conceptual label *social projection*. Accordingly, in the context of predicting the attitudes of others, we will use the terms *projection* and *estimation* to refer to the same process. The terms *assumed agreement/similarity* and *assumed contrast/disagreement/dissimilarity* characterize attitude estimations in respective intragroup or intergroup domains.
2. In addition to the two school districts already discussed, Van Wert County contains a third school district. However, a pretest showed complex relationships between the participant schools and the third school district. The same pretest indicated that both participant schools maintained neutral attitudes about another school located just over the county line. Therefore, this latter school was chosen as the control out-group target.
3. These perfect correlations could indicate that some participants merely copied their own endorsements without estimating in-group attitude positions. However, the strong involvement of each group of students in the outcome of the issues decreases the likelihood that such a mindless process occurred. Moreover, persons who reported perfect assumed similarity to in-group members were more certain of their own opinions after completing the projection task ($M = 6.24$, $n = 7$) than persons who predicted less consensus with their in-group ($M = 4.90$, $n = 17$) ($t(22) = 2.76$, $p < .02$, two–tailed) (cf. Holtz, 2004). Random variables like initial confidence or indifference to the opinions of others cannot explain this finding without also influencing outcomes in the control target conditions. Thus, although the precise proportion of each $r = 1.0$ score that is attributable to social projection is not assessed, it is likely that an in-group projection process produced these scores.
4. In fact, the Kruskal–Wallis tests revealed the same pattern of reliable results as a 2×3 (group deprivation × projection target) between-subjects ANOVA conducted on the within-participant self-other correlation coefficients. This lends support to the argument that the more efficient factorial ANOVA is generally robust to deviations from normality (Lindman, 1974). The advantaged group assumed greater similarity to all targets of projection than members of the

disadvantaged group did ($F(1,74) = 24.93$, $p < .001$); and both sets of participants estimated greater attitude agreement with their in-group than with either out-group ($F(2,74) = 16.43$, $p < .001$). An interaction between group deprivation and projection target was also found ($F(2,74) = 10.69$, $p < .001$). Importantly, within the rival out-group target condition, the disadvantaged group estimated contrast between their own attitude positions and those attributed to their advantaged out-group; but the advantaged group assumed a magnitude of similarity between themselves and the disadvantaged out-group ($F(1,26) = 46.12$, $p < .001$). Additional pairwise comparisons are presented in Table 1 with the mean r scores.

5. The projection of attitude contrast onto the advantaged out-group by disadvantaged participants is evident even when the $r = 1.0$ scores are removed from the in-group target data. A Kruskal–Wallis analysis of the within-participant coefficients pooled across the disadvantaged and advantaged participant groups, but excluding $r = 1.0$ scores, shows that projection onto in-group members still produced greater assumed similarity (*Mdn* $r = .70$) than projection onto either the rival out-group (*Mdn* $r = .43$; $U = 140.00$, $p < .03$) or the control out-group (*Mdn* $r = .48$; $U = 157.50$, $p < .06$) ($\chi^2(2, N = 73) = 5.93$, $p = .05$). Furthermore, specifically among disadvantaged participants, a Kruskal–Wallis analysis of these coefficients without the $r = 1.0$ scores shows a strong difference between projection onto the rival advantaged out-group (*Mdn* $r = -.60$) compared to projection onto in-group members (*Mdn* $r = .86$; $n = 7$; $U = 5.00$, $p < .002$) or control out-group members (*Mdn* $r = .12$; $U = 15.00$, $p < .007$) ($\chi^2(2, N = 27) = 12.92$, $p < .002$). Disadvantaged participants also exhibited a clear difference of assumed similarity between the in-group and control out-group target conditions ($U = 14.00$, $p < .05$). The same analyses of the advantaged participant coefficients (without $r = 1.0$ scores) showed no differences between the respective in-group (*Mdn* $r = .61$), rival out-group (*Mdn* $r = .63$), or control out-group (*Mdn* $r = .60$) target conditions ($\chi^2(2, N = 46) = .34$, ns). Of course, comparisons between disadvantaged and advantaged participant groups within each out-group target condition are not changed because no $r = 1.0$ coefficients were found here.
6. Nonparametric analyses are presented to facilitate comparisons to the results of the within-participant correlation analyses. Nevertheless, a 2 × 3 (group deprivation × projection target) mixed model ANOVA conducted on the between-participant correlation coefficients showed that advantaged participants assumed greater similarity ($M = 0.40$) than disadvantaged participants did ($M = 0.14$) across all target conditions ($F(1, 30) = 5.64$, $p < .03$); and all participants assumed greater similarity to in-group members ($M = 0.69$) than to their rival out-group ($M = -0.05$) or the control out-group ($M = 0.17$) ($F(2, 30) = 15.27$, $p < .001$). These results were qualified by the predicted interaction between group deprivation and projection target ($F(2, 30) = 6.08$, $p < .006$). As Table 2 indicates, this interaction was primarily due to the projection of attitude contrast by disadvantaged participants who estimated the positions of their advantaged rival out-group.
7. Thoughts about in-group members and respective rival out-group members are most germane to this study. Overall, most thoughts were self-related (45%). Positive self-related thoughts occurred in the in-group target condition ($M = 0.63$) and the no-projection condition ($M = 0.70$) more than in the rival out-group target condition ($M = 0.30$) or the control out-group target condition ($M = 0.23$) ($\chi^2(3, N = 107) = 14.93$, $p < .002$). No target differences were found for negative or neutral self-related thoughts. Participants also had issue-related thoughts (17%) and thoughts about the test situation (7%). However, these thoughts did not vary as a function of projection target or valence. Thoughts about the control out-group were least frequent (5%), but occurred primarily in the control out-group target condition.
8. The school-related content of the issues was sufficient to produce thought patterns in the no-projection control condition that were similar to the patterns found in the in-group target condition. Disadvantaged group members had marginally more positive thoughts about their in-group ($M = 0.57$) than neutral thoughts ($M = 0.07$; $Z = -1.75$, $p < .08$, two-tailed). Furthermore, the frequency of negative thoughts about the in-group ($M = 0.25$) was not different from the frequency of positive in-group thoughts or neutral in-group thoughts. However, advantaged group members had more positive

thoughts about their own group ($M = 0.34$) than either negative thoughts ($M = 0.16$; $Z = -2.07$, $p < .04$) or neutral thoughts ($M = 0.04$; $Z = -2.73$, $p < .006$). Again, the latter two categories of thoughts about in-group members did not differ.

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